NEW YORK
DEC 8 1989

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233 -4253

Thomas C. Jorling
Commissioner

December 1, 1989

Mr. Jim Linnane
U.S. Forest Service
Cor. Concord & Mast Roads
P.O. Box 640
Durham, NH 03824

Dear Mr. Linnane:

Worksheets and maps requested by Peter Orr on insect, disease and decline conditions in New York for 1989 are enclosed. We did not report on spruce cone rust, Bruce spanworm, conifer sawflies, jack pine budworm, Saratoga spittlebug, spruce budworm or variable oak leaf caterpillars. These organisms were not a significant problem in 1989 even though they are ones identified by the Forest Service as ones to consider for reporting.

Effects of the 1988 drought and October 1987 snow storm are reported on as requested for the section on significant weather related problems.

A worksheet on red pine decline is included. It is one of the most significant declines in New York State. A worksheet on red pine scale and red pine adelgids is completed as well as a map to reflect the importance of these two insects in southeastern New York.

Also enclosed is a prepublished copy of our report entitled State of Forest Health in New York for 1989. You are welcome to use information contained in this report for preparing your report on Forest Health Conditions in the Northeast.

Questions on the worksheets, maps and report can be answered by Michael Birmingham.

Sincerely,

Daniel W. Weller, Chief
Bureau of Forest Resource Management

Enc.

NY

1989 PEST CONDITIONS REPORT WORKSHEET

PEST (COMMON NAME): Beech Bark Disease

(SPECIFIC NAME):

HOST: American Beech

PRESENT CONDITION:

AREA (TOTAL ACRES): 18 million

LOCATION: Statewide

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES):

Mortality occurring in all counties of New York State, but no estimate of acres of beech dying.

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR $ ESTIMATES): unknown

TREND:

PAST TO PRESENT: increasing

FUTURE: trend toward stability and many trees surviving the disease.

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS):

No control programs undertaken by the department. However, we continue to recommend that forest landowners inspect their beech stands annually and salvage diseased beech promptly.

COMMENTS:

Observed collapse of beech scale insects throughout the state and many infected beech recovering from beech bark disease. Infected beech have cankered bark and only a few scale insects present in bark fissures.

NY

1989 PEST CONDITIONS REPORT WORKSHEET

PEST (COMMON NAME): Diplodia tip blight

(SPECIFIC NAME):

HOST: Austrian pine

PRESENT CONDITION:

AREA (TOTAL ACRES): unknown

LOCATION: statewide

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES): unknown

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR $ ESTIMATES): unknown

TREND:

PAST TO PRESENT: heavy infections

FUTURE: predict continued heavy infections

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS): none by the department

COMMENTS: Diplodia tip blight is most severe in southeastern New York. On Long Island, landscapers have all but stopped planting this species. Along the State parkways in southeastern New York, Austrian pine of all age classes have died from the disease. At Livingston Mills State park, along the Hudson River, downstate, large historic Austrian pine have died or are declining from diplodia tip blight. Elsewhere in New York, the disease is most severe on old or overmature Austria pine.

NY

1989 PEST CONDITIONS REPORT WORKSHEET

PEST (COMMON NAME): dogwood anthracnose

(SPECIFIC NAME):

HOST: dogwood

PRESENT CONDITION:

AREA (TOTAL ACRES): unknown

LOCATION: southeastern New York

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES): unknown

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR $ ESTIMATES): disease believed to be confined to the southeastern most counties. With the publication by the Forest Service of a pamphlet on recognizing the disease and the publications distribution to our forestry staff it is expected that we will learn about the disease's distribution elsewhere in the state.

TREND:

PAST TO PRESENT: increased

FUTURE: unknown

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS):

none by the department

COMMENTS: Flowering dogwood continues to be abundant in southeastern New York along the Taconic State parkway. While no survey for the disease has been conducted, it is conspicuous in flower and their flowers are very conspicuous and abundant. It is concluded, that the disease has not destroyed all the wild dogwoods in southeastern New York as has been inferred in some publications as being eminent.

NY

1989 PEST CONDITIONS REPORT WORKSHEET

PEST (COMMON NAME): oak wilt

(SPECIFIC NAME):

HOST: primarily white oak

PRESENT CONDITION:

AREA (TOTAL ACRES): none

LOCATION: does not occur in New York

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES):

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR $ ESTIMATES):

TREND:

PAST TO PRESENT:

FUTURE:

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS):

COMMENTS: Oak wilt has been expected for at least two decades. Trees displaying oak wilt symptoms have been examined in detail including the culturing of wood suspected of having the disease. No disease has been confirmed. The disease is expected to enter New York state, for it is known to occur within 50 miles of New York in the state of Pennsylvania.

NY

1989 PEST CONDITIONS REPORT WORKSHEET

PEST (COMMON NAME): Scleroderris canker

(SPECIFIC NAME):

HOST: hard pines

PRESENT CONDITION:

AREA (TOTAL ACRES): unknown

LOCATION: 10 northeastern counties of New York

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES): light - less than 30 percent of the trees displaying foliar symptoms of the disease.

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR $ ESTIMATES): none

TREND:

PAST TO PRESENT: declining

FUTURE: decline to endemic level and remain at low level until weather conditions increase spread and buildup in intensity of the disease.

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS):

none by the department

COMMENTS: Scleroderris canker is a significant disease of northern hard pines in New York. In the 1970's it was the most significant killer of such pines. However, comprehensive studies by the Forest Service and our department indicate a significant decline in the disease and this decline is attributed to unfavorable weather conditions for the spread and buildup of the disease.

NY

1989 PEST CONDITIONS REPORT WORKSHEET

PEST (COMMON NAME): drought of 1988

(SPECIFIC NAME):

HOST: eastern hemlock and red pine

PRESENT CONDITION:

AREA (TOTAL ACRES): unknown

LOCATION: eastern half of New York State

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES): killed red pine; caused top dieback of hemlock.

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR $ ESTIMATES): unknown

TREND:

PAST TO PRESENT: increased

FUTURE: decline

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS):
none by department

COMMENTS: Eastern hemlock decline from top downward from effects of drought. Red pine became susceptible to bark beetle attacks and their foliage turned straw color or brick red. Decline and mortality of pine and hemlock confined to shallow, droughty soils.

NY

1989 PEST CONDITIONS REPORT WORKSHEET

PEST (COMMON NAME): snow damage of 1987

(SPECIFIC NAME):

HOST: all deciduous species

PRESENT CONDITION:

AREA (TOTAL ACRES): unknown

LOCATION: east of Hudson River from southern Washington County southward to mid Putnam County

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES): One or more major branches broken. Major branches exceed three inches in diameter at point where they attach to trunk.

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR $ ESTIMATES): unknown

TREND:

PAST TO PRESENT: increasing

FUTURE: increase. As decay organisms invade wood through wounds caused by the storm the amount of wood discoloration and decay will increase. Eventually storm damaged trees will become hollow and break in wind and ice storms.

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS):

none by the department

COMMENTS: The snow damage was severe because it fell in October before the deciduous trees dropped their leaves. The wet snow was so heavy that it caused the branches and trunks of trees to snap under its weight. The breakage on some woods of trees was near total. Severe wounding has occurred to many surviving trees. Large numbers of trees have broken tops and partially broken branches. Damage to wounded trees will continue to increase with the advancement of decay in wounds that cannot heal.

NY

1989 PEST CONDITIONS REPORT WORKSHEET

PEST (COMMON NAME): ash yellows

(SPECIFIC NAME):

HOST: white ash

PRESENT CONDITION:

AREA (TOTAL ACRES): unknown

LOCATION: statewide

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES): estimate one third of the white ash in the state show symptoms of ash yellows.

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR $ ESTIMATES): unknown

TREND:

PAST TO PRESENT: stable

FUTURE: gradual decline as ash becomes less common. Decline in ash trees due to natural replacement of ash with more shade tolerant trees.

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS):

none by the department

COMMENTS: Ash yellows has been documented since the mid 1960's when it was believed that it was caused by air pollution and other stress related pathogens. The most severe decline of ash occurs in eastern New York.

NY

1989 PEST CONDITIONS REPORT WORKSHEET

PEST (COMMON NAME): yellow and white birch declines

(SPECIFIC NAME):

HOST:
yellow and white birches

PRESENT CONDITION:

AREA (TOTAL ACRES): unknown

LOCATION: primarily in northern counties where birch is common.

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES): Extremely variable

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR $ ESTIMATES): unknown

TREND:

PAST TO PRESENT: stable

FUTURE: stable

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS):

none by department

COMMENTS: Yellow birch decline most severe in mature and overmature trees growing on sites disturbed by logging or by American beech or red spruce declines. White birch decline most severe in mature and overmature trees, lawn trees on dry, hot sites and where snow has bent and broken tree trunks. Bronze birch borer also a factor in the decline of white birches.

NY

1989 PEST CONDITIONS REPORT WORKSHEET

PEST (COMMON NAME): larch decline

(SPECIFIC NAME):

HOST: Tamarach

PRESENT CONDITION:

AREA (TOTAL ACRES): unknown

LOCATION: Adirondack region

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES): unknown

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR $ ESTIMATES): unknown

TREND:

PAST TO PRESENT: increasing

FUTURE: decline

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS):

none by department

COMMENTS: Tamarach declines have been documented in New York as early as the 1920's. They followed defoliation and attacks by bark beetles. The most recent declines have not always been associated with defoliation. But they have always occurred in the presence of bark beetle attacks. Generally the mature larch are first to die. Middle aged trees also decline. Larch continues to regenerate in New York and appears to go through cycles of recovery and decline.

NY

1989 PEST CONDITIONS REPORT WORKSHEET

PEST (COMMON NAME): Maple decline

(SPECIFIC NAME):

HOST: sugar and red maples

PRESENT CONDITION:

AREA (TOTAL ACRES): unknown

LOCATION: statewide

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES): variable

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR $ ESTIMATES): unknown

TREND:

PAST TO PRESENT: slight increase

FUTURE: stable

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS):
none by department

COMMENTS: Maple is under study by Forest Service and New York to determine if maples in polluted or managed forests decline more than maples in clean air or unmanaged forests. DEC also conducted a study of 31 sugar bushes in 16 counties to determine their health. No sugar bushes were rated in poor health Unhealthy maples attributed to defoliators, poor management practices and overmaturity. Red maple declines associated with inundation by water. Flooding caused by damming streams and poor drainage result in red maples in low lands standing in water for prolonged periods in the growing season. Salting of roads also associated with maple declines.

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1989 PEST CONDITIONS REPORT WORKSHEET

PEST (COMMON NAME): oak decline

(SPECIFIC NAME):

HOST:
all oaks

PRESENT CONDITION:

AREA (TOTAL ACRES): unknown

LOCATION: statewide

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES): variable. Severe oak decline leads to death of the tree. Evidence of severe oak decline include dieback of major branches; undersized, chlorotic leaves and the infection by shoe string fungus and two lined chestnut borer.

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR $ ESTIMATES): unknown

TREND:

PAST TO PRESENT: increased

FUTURE: long term oak decline will decrease. As oaks are replaced by more shade tolerant trees, such as maples, the amount of oak decline will decrease.

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS):
non by the department

COMMENTS: Oak decline increased with the spread and buildup of gypsy moths and subsequent defoliation this insect causes. Maples are replacing oaks on many sites where oak regeneration cannot compete with more shade tolerant trees. Oaks are becoming less abundant. Gypsy moth occurs throughout the state and there is no region of the state where oaks occur that oak decline is wanting.

NY

1989 PEST CONDITIONS REPORT WORKSHEET

PEST (COMMON NAME): red pine decline

(SPECIFIC NAME):

HOST: red pine

PRESENT CONDITION:

AREA (TOTAL ACRES): unknown

LOCATION: southern New York, appeared in northern zone

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES): variable.

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR $ ESTIMATES): unknown

TREND:

PAST TO PRESENT: increase

FUTURE: increase within next 20 years

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS):

on state reforestation areas, department foresters accelerating cut of red pine to salvage trees that have economic value.

COMMENTS: Red pine decline, first documented for New York in the late 1940's, occurs due to site limitations and aging of pines. It is most conspicuous on shallow, excessively wet or dry sites. Typical soils where declines occur are heavy soils with high component of clay and shallow depth to fragipan. Tops of declining pines die back. In southern zone, pines invaded by blue strai and ips beetles. In northern zone, top dieback not associated with blue strain of bark beetles. On many sites with 50 year or older pines, mortality exceeds annual growth. Thinning does not help pines recover. Once decline symptoms appear, radial growth slows and does not recover from thinnings.

NY

1989 PEST CONDITIONS REPORT WORKSHEET

PEST (COMMON NAME): spruce and fir declines

(SPECIFIC NAME):

HOST:

red and black spruce and balsam fir

PRESENT CONDITION:

AREA (TOTAL ACRES): unknown

LOCATION: Adirondack and Catskill Regions and Tug Hill Region

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES): unknown

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR $ ESTIMATES): unknown. However, most spruce and fir declines are in overmature stands. Most overmature stands are on Forest Preserve lands where the cutting of trees for commercial purposes is prohibited by the State Constitution. Therefore, most spruce and fir have no commercial value due to the prohibition on cutting on Forest Preserve lands.

TREND:

PAST TO PRESENT: increase

FUTURE: long term stability. Spruce and fir are regenerating except for the Tug Hill region where hardwoods are replacing spruce and fir.

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS):
none by department

COMMENTS: The Forest Service and department have cooperated on studies of spruce and fir for the past five years. These studies have shown several reasons for the declines. While not all symptoms of declining spruce and fir have been explained, the important roles of insects, diseases, and natural conditions associated with wind and ice have been documented.

NY

1989 PEST CONDITIONS REPORT WORKSHEET

PEST (COMMON NAME): gypsy moth

(SPECIFIC NAME):

HOST: large variety of hardwood and softwood trees, many shrubs

PRESENT CONDITION:

AREA (TOTAL ACRES): 18 million acres

LOCATION: statewide

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES): 421,138 acres defoliated in excess of 30 percent

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR $ ESTIMATES): none

TREND:

PAST TO PRESENT: increase

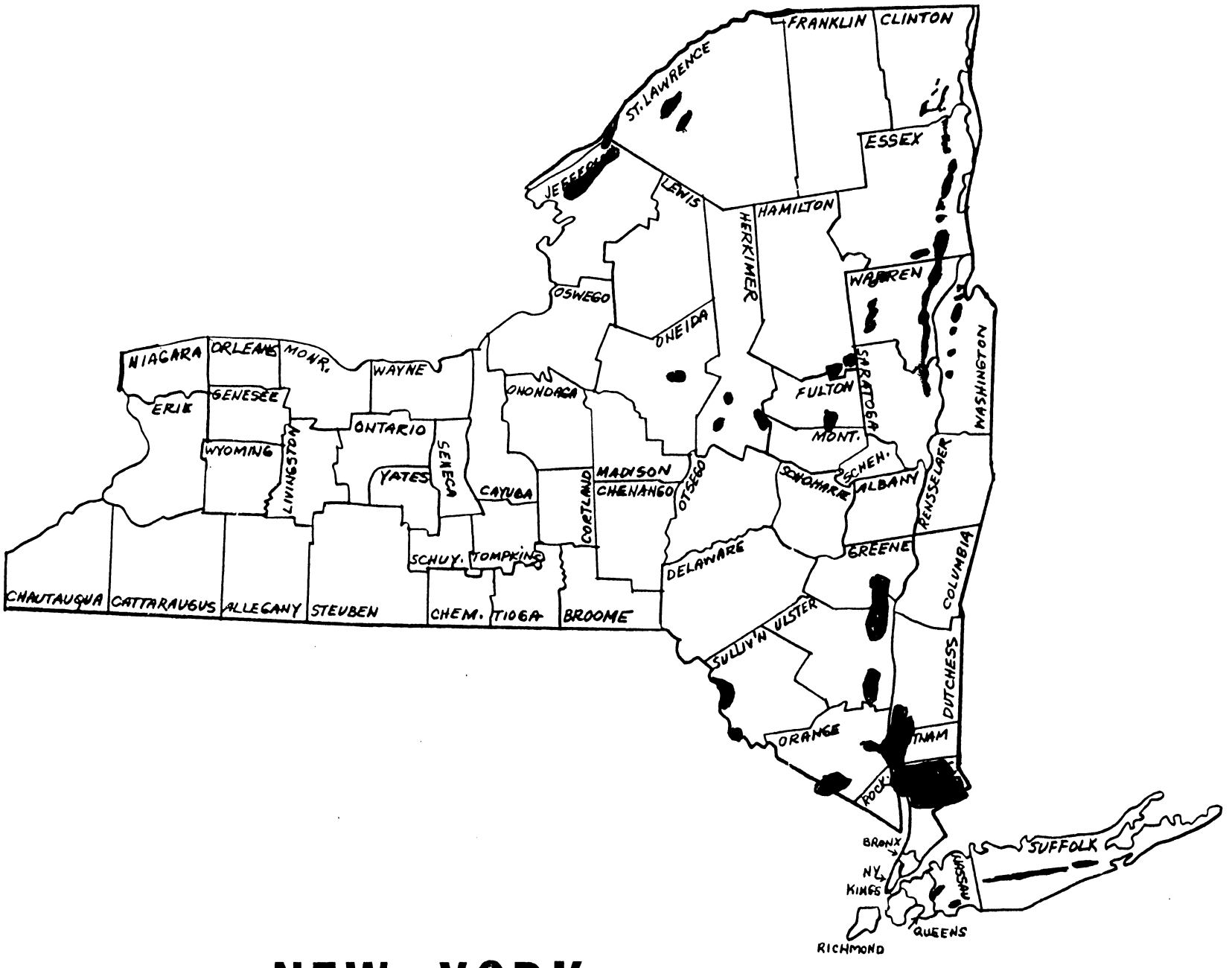
FUTURE: unknown

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS):

none by department

COMMENTS: Gypsy moth defoliation increased appreciably in 1989. A fungal disease occurred in the population and large numbers of caterpillars were killed. The disease will not prevent the insect from being a major pest in 1990. Many egg masses were layed on trees following this year's outbreak. The disease did kill vast numbers of caterpillars and prevented a more serious level of defoliation. However, the disease did not occur north of Glens Falls.

GYPSY MOTH



NEW YORK

NY

1989 PEST CONDITIONS REPORT WORKSHEET

PEST (COMMON NAME): Hemlock woolly adelgid

(SPECIFIC NAME):

HOST: eastern hemlock

PRESENT CONDITION:

AREA (TOTAL ACRES): unknown

LOCATION: Long Island, New York City, Westchester, Putnam, and within three miles of the Hudson River in Dutchess, Rockland and Orange Counties

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES): Killing all ages of hemlock, although mortality occurs over a prolonged period.

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR $ ESTIMATES): Unknown, but primarily in shade trees. Forest grown trees are being salvaged when they are assessable and cutting permitted by the landowner.

TREND:

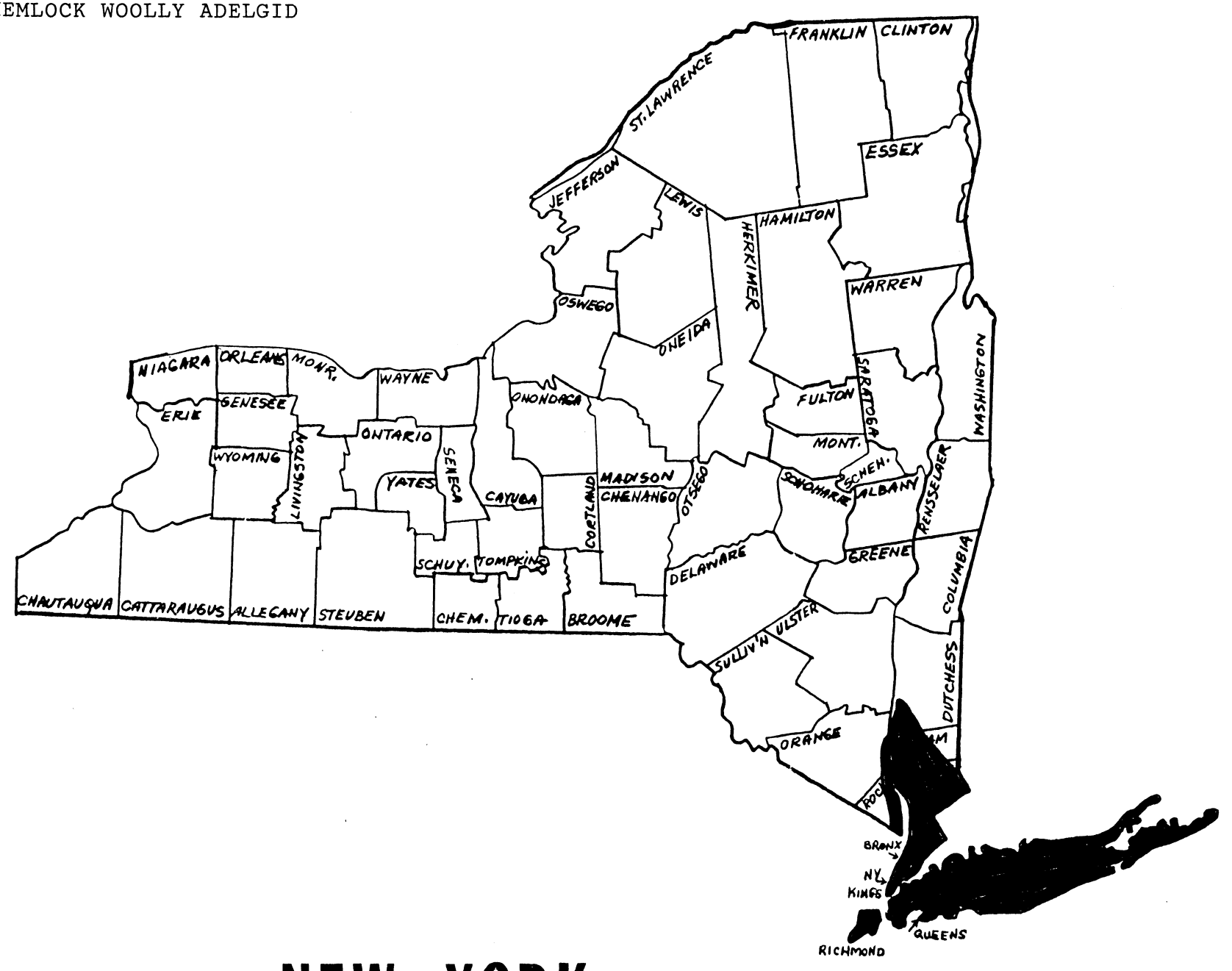
PAST TO PRESENT: increasing

FUTURE: increase

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS):
none by department

COMMENTS: Hemlock woolly adelgid first reported north of the city of New York in 1987. By 1988, mortality of hemlocks reported in Westchester and Rockland Counties. Mortality now occurs in Putnam and Orange Counties. Many hemlocks infested with the adelgid have thin, chlorotic crowns. Insect continues to spread northward and occurs further from the Hudson River in Putnam County than one year ago.

HEMLOCK WOOLLY ADELGID



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1989 PEST CONDITIONS REPORT WORKSHEET

PEST (COMMON NAME): PEAR THRIPS

(SPECIFIC NAME):

HOST: maples

PRESENT CONDITION:

AREA (TOTAL ACRES): unknown

LOCATION: statewide except for interior of Adirondacks and Catskills

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES): light foliage damage

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR $ ESTIMATES): unknown

TREND:

PAST TO PRESENT: declined

FUTURE: unknown

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS):
none by department

COMMENTS: A cooperative effort to determine pear thrip adult densities in soils was made. Cornell University, Forestry College and department scientists collected soil samples and processed them. Few adults were recovered. Little foliage damage was observed in plots where soil samples were taken confirming that pear thrips population had colapsed. Soil sampling too time consuming to be practical for large area surveys.

NY

1989 PEST CONDITIONS REPORT WORKSHEET

PEST (COMMON NAME): Red pine scale and red pine adelgid

(SPECIFIC NAME):

HOST: red pine

PRESENT CONDITION:

AREA (TOTAL ACRES): unknown

LOCATION: southeastern New York

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES): severe. Red pine decline and die within five years of infestation.

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR $ ESTIMATES): unknown. Primarily small plantations of pines affected. Many City of New York reservoir trees dead from the infestations.

TREND:

PAST TO PRESENT: increased

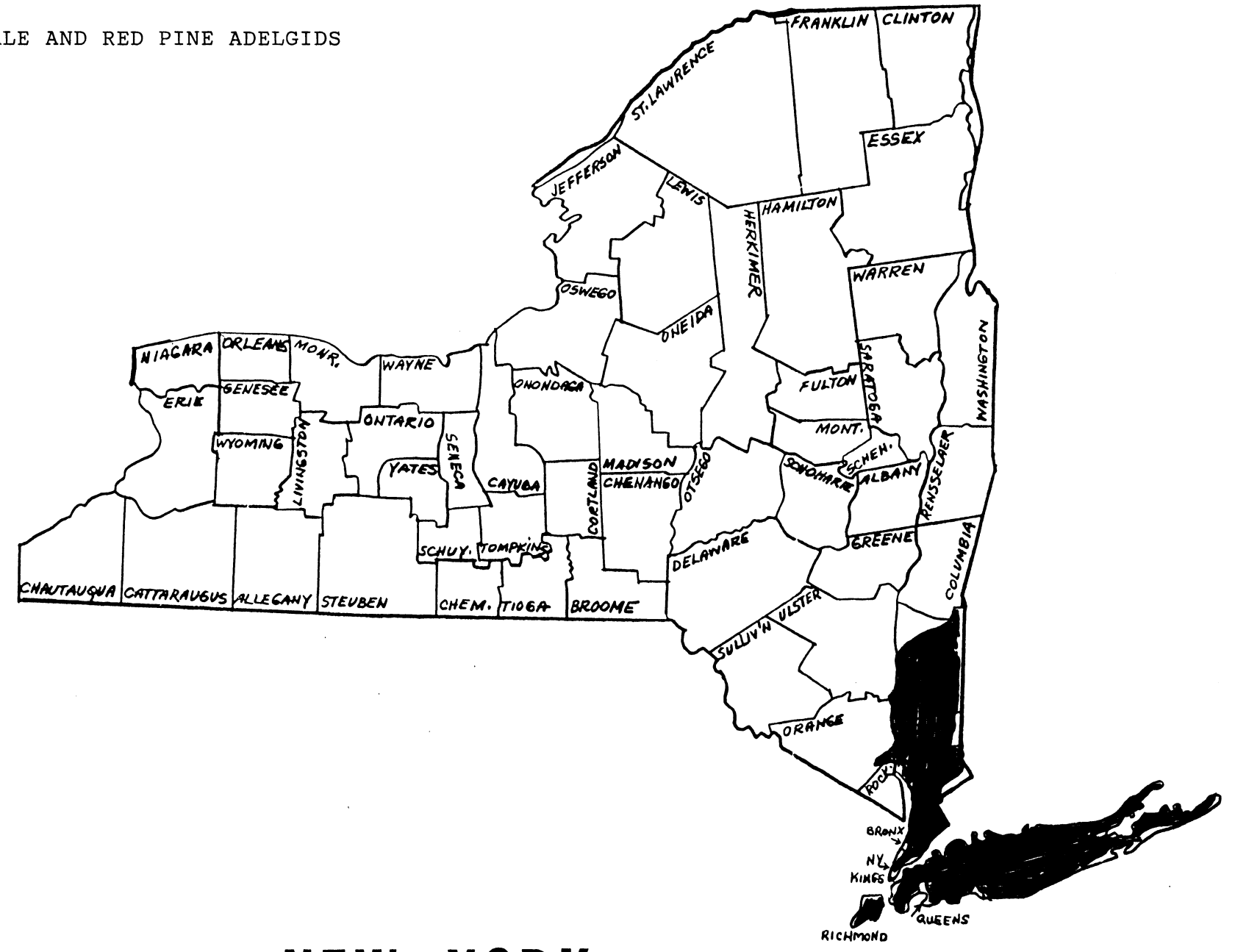
FUTURE: slowing of spread

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS):

none recently by department

COMMENTS: The adelgid was found farther north than it has been previously. It now occurs near northern Dutchess County. Red pine scale occurs to the southern border of Columbia County. An infestation of scale found at the Harriman Exit of the New York State Thruway was destroyed with the cutting of infested red pines. The scale may be reaching its northern limit in the state. However, the adelgid appears capable of more northern habitation. Many red pine are dying in the region due to overmaturity on the thin, heavy soils. Red pine declines from soil limitations far exceed annual losses by the adelgid or scale infestations.

RED PINE SCALE AND RED PINE ADELGIDS



NEW YORK

1989 PEST CONDITIONS REPORT WORKSHEET

PEST (COMMON NAME): saddled prominent

(SPECIFIC NAME):

HOST: maple, beech and cherry

PRESENT CONDITION:

AREA (TOTAL ACRES): 130,000

LOCATION: eastern Delaware County

SEVERITY (INCLUDE ACRES OF MODERATE AND HEAVY DEFOLIATION OR INFECTION; DEFINE CLASSES): complete or near complete defoliation of host trees

LOSSES (INCLUDE AREAS OF TREE MORTALITY; ALSO VOLUME AND/OR $ ESTIMATES): none

TREND:

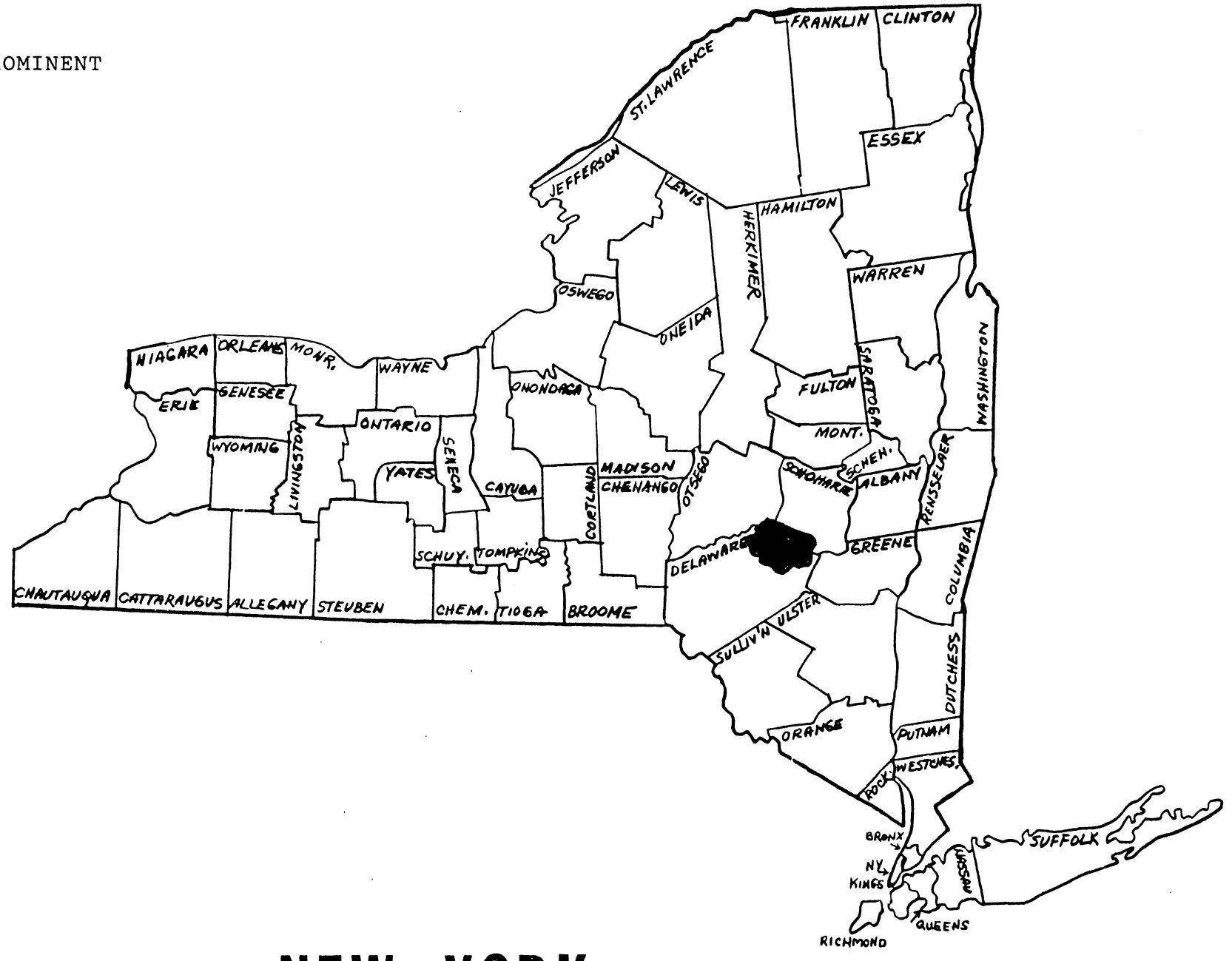
PAST TO PRESENT: increase

FUTURE: decline

CONTROL PROJECTS (METHOD, MATERIAL, ACRES, COST, RESULTS):
none by department

COMMENTS: saddled prominent population rose and colapsed in one season. The colapse due to a pathogen similar to the gypsy moth fungal disease. No saddled prominent pupae found in heavily defoliated area. Nearly all larvae died before pupation due to the fungal disease. Resting spores of the fungal disease found in larvae examined under magnification.

SADDLED PROMINENT



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